

Project Fact Sheet

Strategic Value Analysis: Power Flow Simulations and Development of Renewable RD&D Performance Goals

GOALS

- Improve the reliability/quality of California's electrical system by identifying where renewable distributed generation systems can be located to best help alleviate transmission and distribution capacity and congestion problems in the state.



PROJECT DESCRIPTION

This project will help determine the necessary performance and cost characteristics and best locations for the renewable power technologies that will be able to best provide the combined high electricity system and public benefits to California. A combination of power flow models and geographical information system (GIS) tools will be used to identify the ability of renewable generation systems to address electricity system problems and identify the optimal locations for using renewable generation systems.

BENEFITS TO CALIFORNIA

This project will investigate the extent to which renewable distributed electricity generation systems can address current and future problems facing California's electricity system while simultaneously providing other public benefits. Specifically, the project will:

- Identify and characterize generation and transmission and distribution (T&D) problems confronting California's electricity system over the next five and ten years using power flow models calibrated to California's electricity system and based on various demand scenarios;
- Determine the performance characteristics of generation, distribution, transmission and substation upgrades or expansions needed to effectively address electricity system problems over the next five and ten years as identified in the power flow models;
- Identify locations within California's electricity system where sufficient renewable generation supplies exist to effectively address electricity system "hot spots" as identified in the power flow models and the GIS results obtained from an associated contract;
- Establish at least two case studies that provide representative and site specific analyses on the use of renewable generation systems to effectively and affordably address California's

- electricity system problems, while simultaneously providing other high public benefits; and
- Specify PIER renewable energy research and development goals that act as targets for the required performance and cost characteristics that will enable advanced renewable generation systems to help address the problems facing California's electricity system.

FUNDING AMOUNT

Commission \$730,000
Match \$0

PROJECT STATUS

This is ongoing project. A kick off meeting was held in May, 2002 with McNeil Technologies and subcontractors to review scope of work and administrative items. A revised Gantt Chart for project schedule was issued.

Work is progressing for developing data sets for power flow modeling of California's electricity system and power flow model simulations of California's hot spots.

FOR MORE INFORMATION

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